

Sheet # 1 of 11

Henry Rohrig    Truck Alignment System  818-761-3628    818-489-2049

Brief description of the invention several views of the drawing

Drive axle unit part # 856 passenger side / part # 857 driver side

There are two units one for each side of the truck they are made using 1 / 2" x 2" 6061 aluminum bar and welded, together, the alignment pins made from 75 ST aluminum round bar. Machined one end to 3 /4" with 3/8" radius and 1/8" shoulder that rest in the wheel radius to locate unit. The other end milled off flat and the two fixed pins have steel insert part # 651-04 threaded in the center and the other four pins have the steel insert located 3/16" off center so it is adjustable, they are attached with 1 / 4" allen bolts. There is a chain that keeps them, from getting lost or damage. There are two sets of holes for the pins one is for 22.5" size red index the other size 24.5" black index. For more information see material list next and the drawing next page.

Material list for one side, it requires two units one opposite.

- # 1      1 pc.    center upright 1 / 2" x 2" x 27 " 6061 aluminum bar stock
- # 2      1 pc.    top cross member 1 / 2" x 2" x 27" 6061 aluminum bar stock
- #3      1 pc.    bottom cross member 1 / 2" x 2" x 45" 6061 aluminum bar stock
- #4      2pc.    top and bottom locator pins 1" x 4" 75ST round stock
- #5      4pc.    locator pins        1" x 3 1/2" 75 ST round stock
- #6      1 pc.    laser level part # 46735
- #7      2pc.    3/8" threaded rod 10" long with 1 1/2" bend 80 degree with wing nuts & washers
- #8      2pc.    3/8" ID. x 3" springs
- #9      7pc.    1/4" x 1 1/4" allen bolt
- #10     6pc.    1/4" x 4" chain w/drive pins #6 x 1/2"

Henry Rohrig    Truck Alignment System 818-761-3628    818-489-2049    Part# 856 / Part# 857

Drive Unit    for 22.5" / 24.5"    wheel size also used on Buses and Trailers

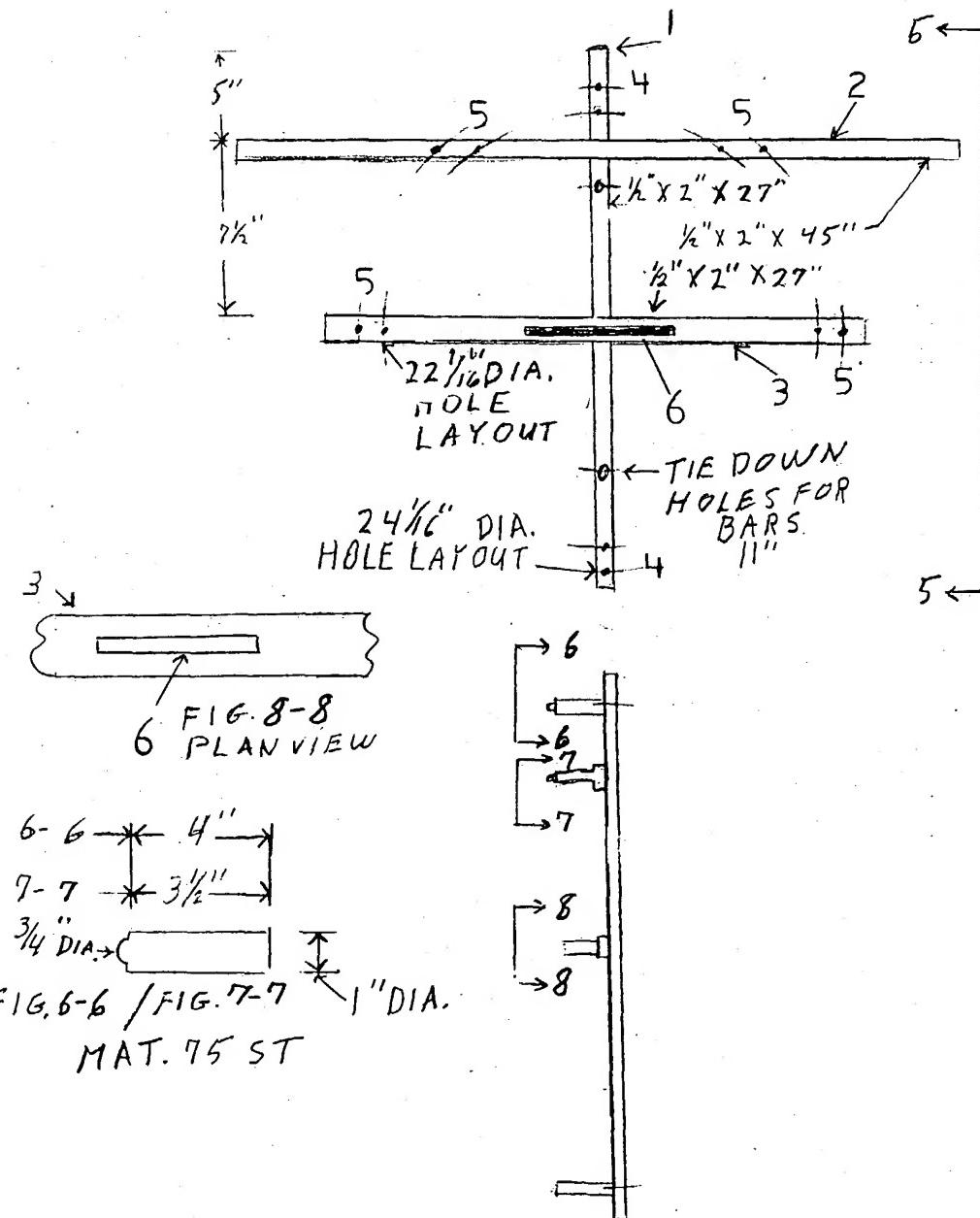


Figure 5-5 Rotated 90 degrees

Part # 856    passenger side

Part # 857    Driver side

Henry Rohrig Truck Alignment System Steering unit part # 858 passenger side / 859 drivers side.

There are two units one for each side of the truck they are made using 1/2" x 2" 6061 aluminum bar stock and welded together, the alignment pins made from 75 ST aluminum round bar stock. Machined one end to 3/4" with 3 / 8" radius and 1/8" shoulder that rest in the wheel radius to locate unit. The other end milled off flat and the two fixed pins has steel insert part # 651 - 04 threaded in the center and the other four pins has the steel insert located 3 / 16" off center so it is adjustable, all the pins are attached with 1 / 4" allen bolts. There is a chain that keeps them from getting lost or damage. There are two sets of holes for the pins one is for 22 . 5" size wheel red index the other 24 . 5" size wheel black index. For more information see material list next and the drawing next page.

Material list for one side, it requires two units one opposite.

- # 1 1 pc. center upright 1/2" x 2" x 27" 6061 aluminum bar stock
- # 2 1 pc. top cross member 1/2" x 2" x 45" 6061 aluminum bar stock
- # 3 1 pc. bottom cross member 1/2" x 2" x 27" 6061 aluminum bar stock
- # 4 2 pc. top and bottom locate pins 1" x 2" 75 ST round stock
- # 5 4 pc. locate pins 1"x 1 1/2" 75 ST round stock
- # 6 1 pc. scale support 1/4" x 1 1/2" x ~~6~~<sup>7</sup> 6061 aluminum bar stock
- # 7 1 pc. 6" scale
- #8 2pc. 3/8" threaded rod 11 1/2" long with 1 1/2" bend 80° with wing nuts & washers
- #9 2pc. 3/8" ID. x 3" springs
- #10 6pc. 1/4" x 4" chain with drive pins #6 x 1/2"
- #11 6pc. 1/4" x 1 1/4" allen bolts

Henry Rohrig Truck Alignment System 818-761-3628 818-489-2049 Part # 858 / Part # 859

Steering Unit for 22.5" / 24.5" wheel size also used on Busses

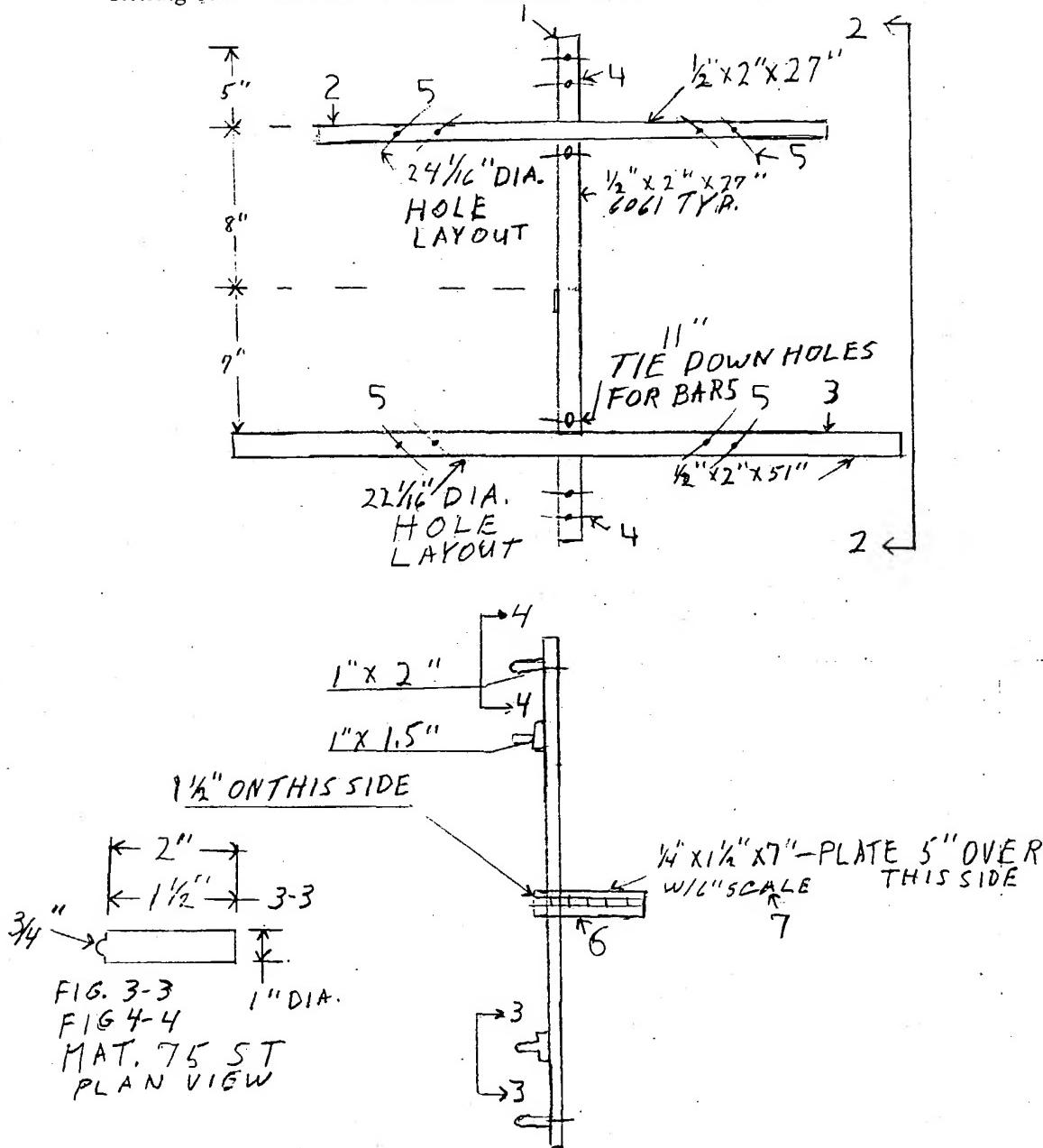


Figure 2 - 2 Rotated 90 degrees

Part # 858 Passenger side

Part # 859 Driver side

Henry Rohrig Truck Alignment System - Trailer Unit part # 860

This unit made with 1/16" x 1 1/2" x 1 1/2" 4130 steel tubing and 1/8" steel plate see material list and drawing next sheet. A 6" scale with 1/16" graduation located each side on bottom of unit used for the alignment. These two scales have a index point at the 3" mark that is used to calibrate the unit. To calibrate use the trammel point and bar, put one end on the 3" mark the other on the index point at the red dot, top center of unit, then to other side and set on scale 3" mark and adjust scale if required. This is calibrated with the king pin, it has two telescope legs that swing to the rear and touch the ground. This holds the unit in place with the king pin, this plate is # 6 on the drawing page # 6. Some shops use the outside of trailer which can be incorrect if it is damage. The only true part is the king pin.

To align the trailer you would use the Drive Axle Alignment tooling sheet #6 picture # 9. Jack the rear axle rotating the wheel and checking bearing for condition and tightness. You will also check the brake drums making sure they are not rubbing or the brakes are not out of adjustment. Now check if there is wheel movement top- to bottom or side to side, if so you must replace the bearings or recalibrate then. When everything checks out you lower the wheels onto the roller plates. Next you install the same tooling used for the drive axle alignment and attach them to both wheels, the bottom and lower front pins are fixed to locate unit, use the two threaded rods to hold the units to the wheels, then rotate the other four pins to rest in wheel radius and tighten allen bolts in both units. Next turn laser light on both sides and light will be projected on the scales located on the king pin tooling. If it is not the same number on both sides the axle will have to be adjusted to align up correctly. After this rejacking and remove roller plates. If you have two axles then proceed to forward axle and repeat the same method again.

Material list;

- #1 1 pc. top frame 1 1/2" x 1 1/2" x 108" 4130 steel tubing
- #2 2 pc. angle brace 1 1/2"x 1 1/2" x 33 7/8" cut on 45 degree angle 4130 steel tubing
- #3 2 pc. side frame 1 1/2" x 1 1/2" x 24" 4130 steel tubing
- #4 2 pc. plate for scale 1/8" x 1 1/2" x 6" 4130 steel bar
- #5 2 pc. telescope leg # 9406 steel tube
- #6 1 pc. alignment plate king pin 1/8" x 6" x 12" 4130 steel bar

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Trailer Unit    for 22.5" / 24.5"    wheel size

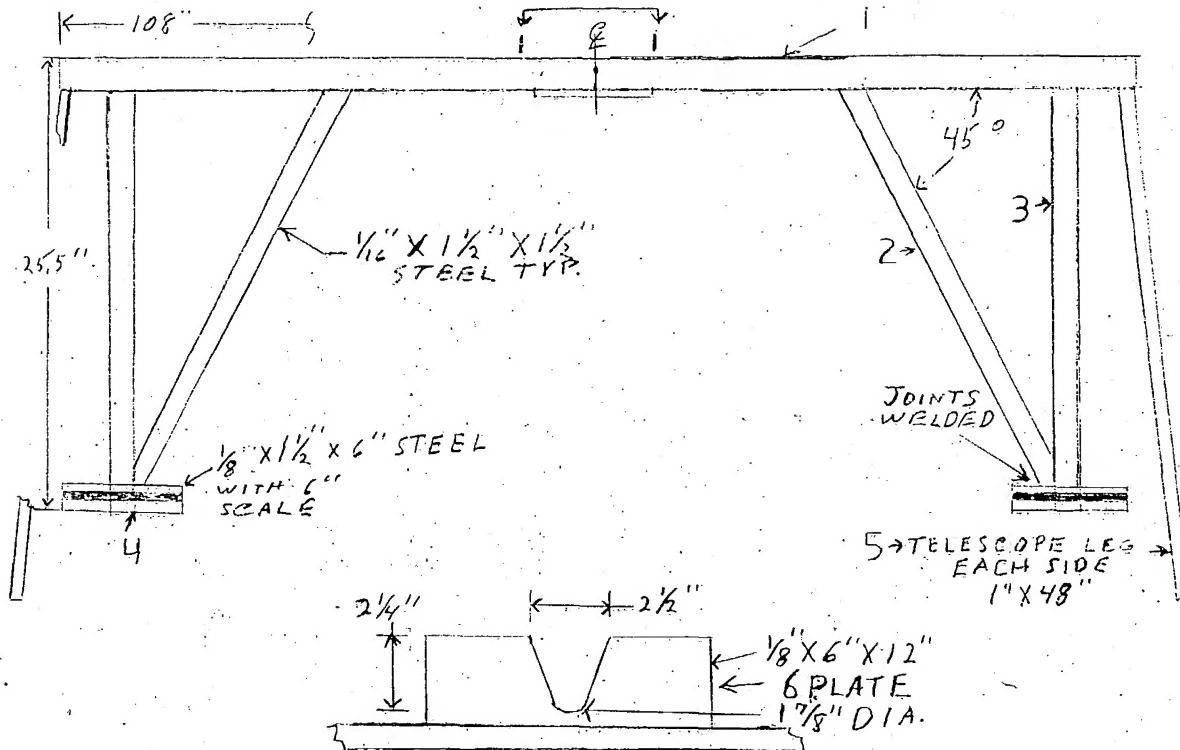
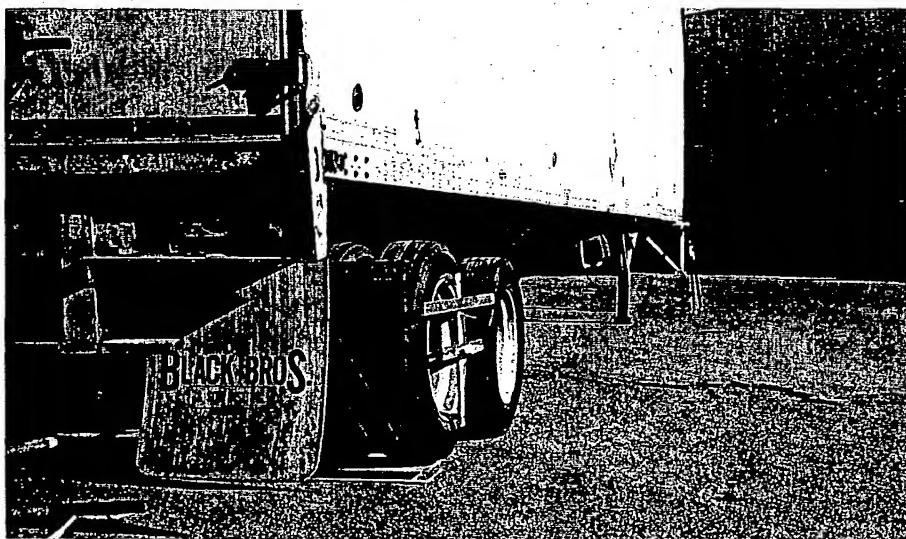


Figure 1 - 1



Picture # 9

Henry Rohrig Truck Alignment System Tooling Jigs to calibrate alignment units part # 861 / part # 862

Jigs for steering unit part # 861 - shown on drawing top left side looking forward weld -1 & -2 together at 90 degree. Fig. 9 - 9 top right side looking forward at end support plate-1 there are cutouts for the two cross members to pass through plate -1. Fig.10-10 -2 . There are two 1 1/2" holes for the threaded rods to hold units to jig same as onto the wheels. There is a picture below showing them attached.

Jigs for drive unit part # 862 shown on drawing bottom left side looking backward weld -1 & -2 together at 90 degree. Fig. 11-11 top right side looking backward at the support plate -1, there are cutouts for the two cross members to pass through plate -1 Fig. 12-12. There are two 1 1/2" holes for the threaded rods to hold units to jig same as onto the wheels. There is a picture below showing them attached.

To calibrate units - place units 20' apart on smooth level floor, attach line across top of steering center support and back across center support of drive unit, this will align units. Installing units into jigs with threaded rods. Turn laser lights on both sides, light will projection onto the scale. If the light does not align to same number adjust the scale to align to the proper number.

Material list;

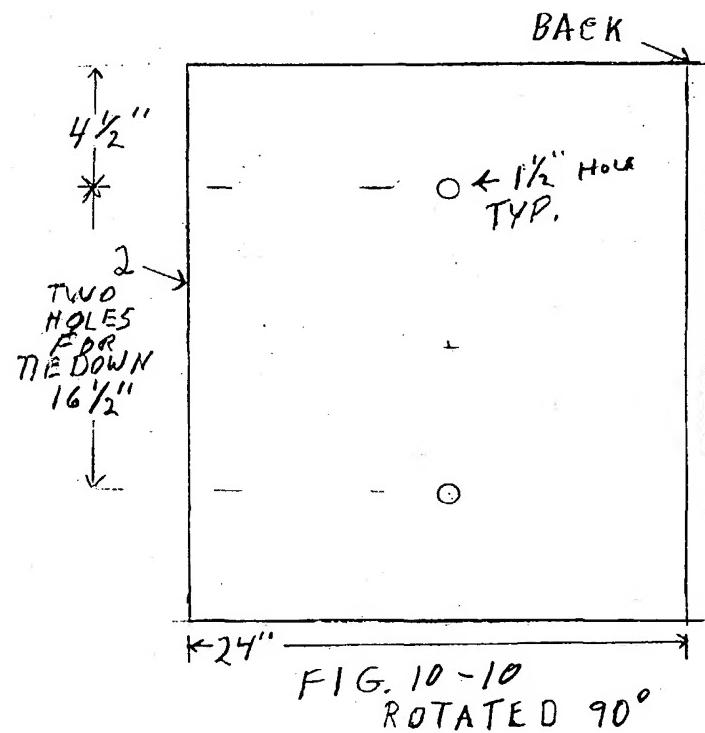
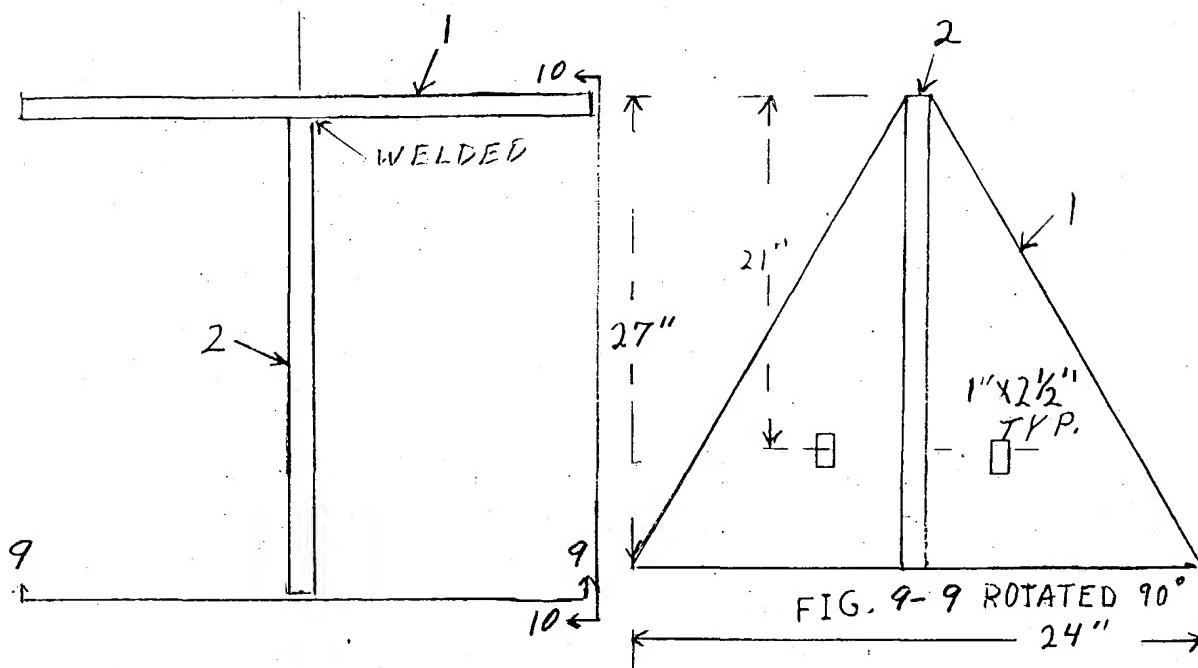
- |     |       |                    |   |
|-----|-------|--------------------|---|
| #1  | 1 pc. | 3 / 8" x 24" x 27" | 6061 aluminum - cutting piece on both sides going from bottom corner to top with 1" flat in center cut at this point. |
| # 2 | 1 pc. | 3 / 8" x 24" x 27" | 6061 aluminum - this is for one jig, make both the same except for the holes as called out by the drawing,            |



Picture # 15

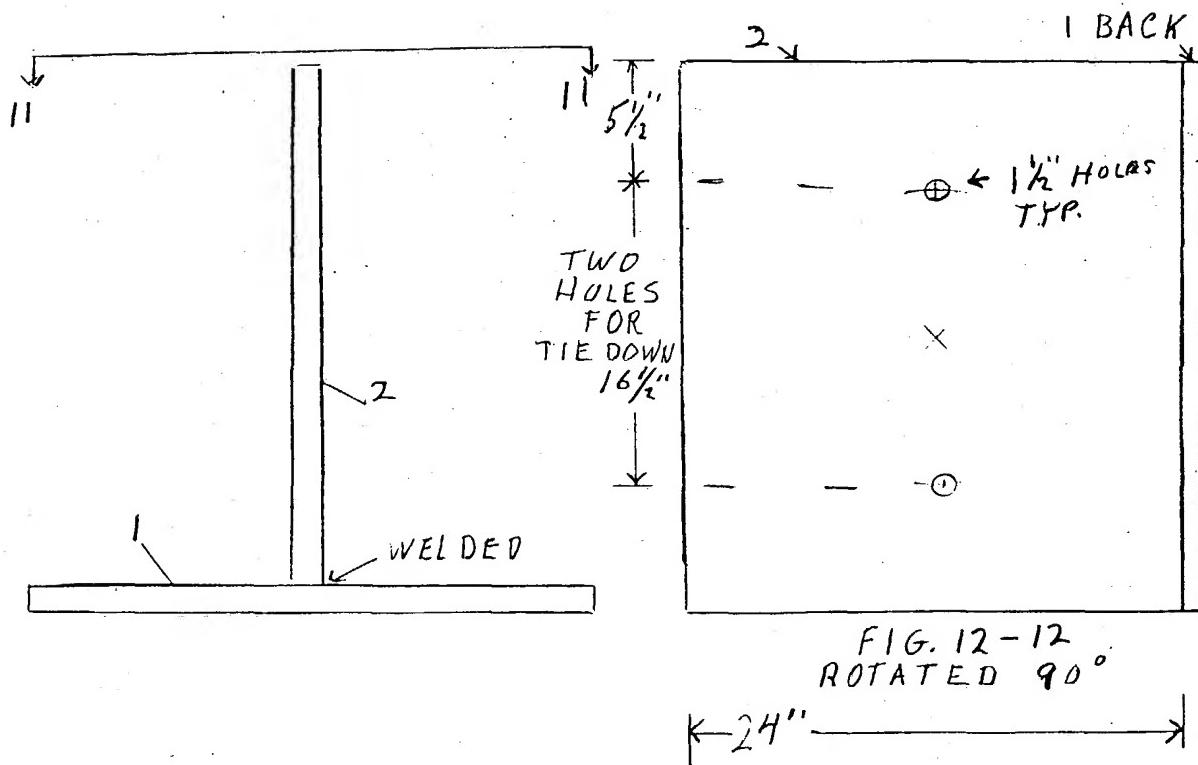
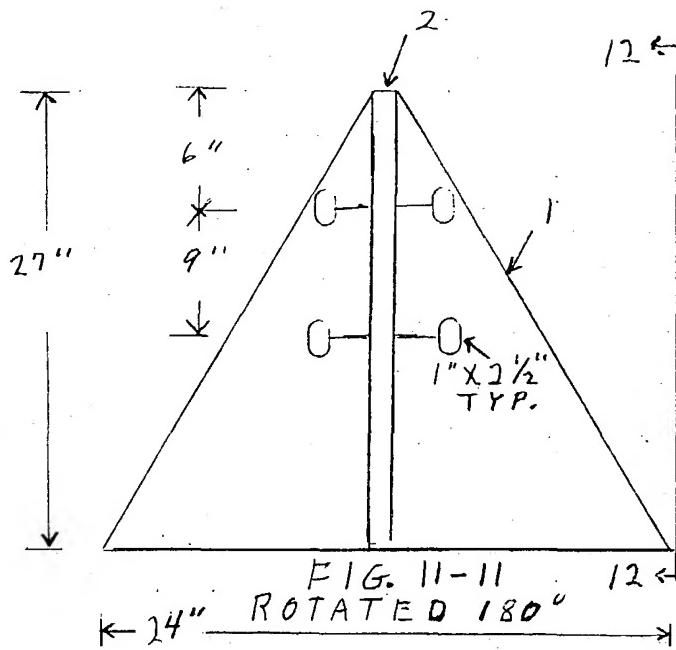
Henry Rohrig Truck Alignment System 818-761-3628 818-489-2049 Part # 861

Tooling Jig Steering Axle for 22.5" x 24.5" also used on Busses



Henry Rohrig    Truck Alignment System 818-761-3628    818-489-2049    Part # 862

Tooling Jig    Drive Axle for 22.5" / 24.5" wheel size also used on Busses and Trailers



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Roller plate # 2 part # 864

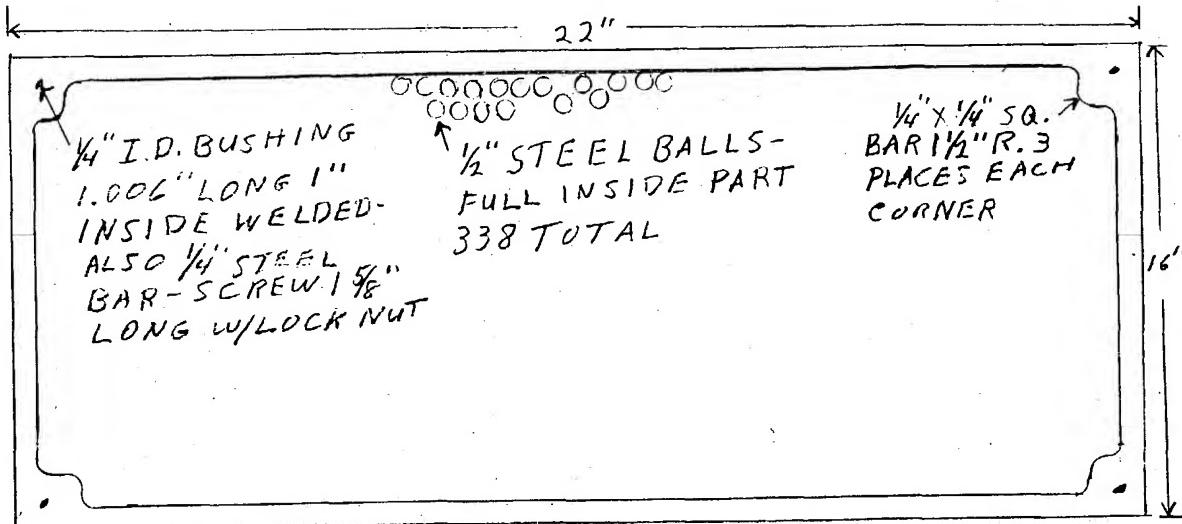


Figure # 13 Bottom Plate 16" x 22" 4130 steel plate

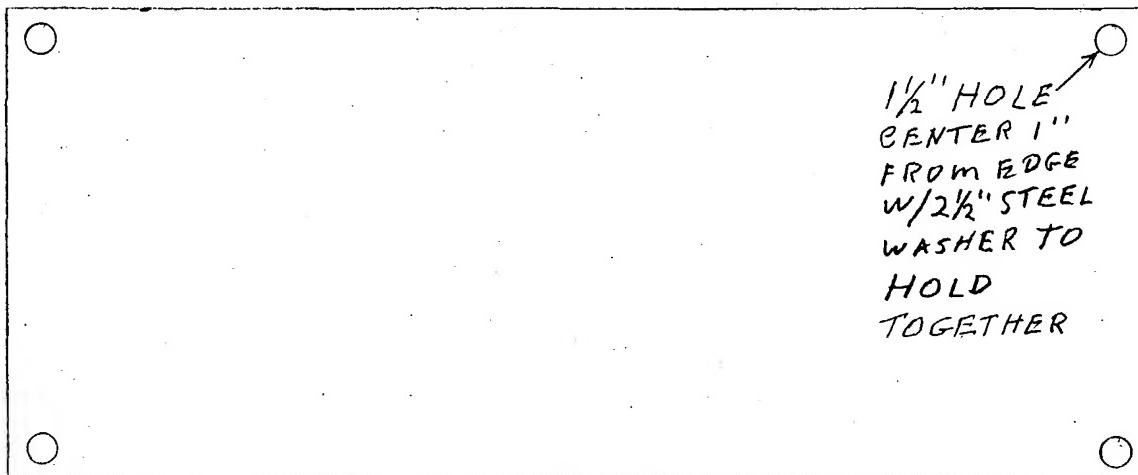


Figure # 14 Top Plate 16" x 22" 4130 steel plate

see page #11 of specification section for more information

INDEX Drawing

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#3    Steering unit tooling description

#4    Steering unit drawing    part # 858 / part # 859

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#6    Trailer unit drawing part # 860

#7    Jigs to calibrate tooling description

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#10    Roller plate # 2 drawing part # 864

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